Sony Ericsson

EXHIBIT 1

Invention Disclosure Form

Docket No. U03 0105

Date opened: _____

1. Invention Title: Integrated Wireless Headset

2. Submitted by:	1st Inventor	2nd Inventor	3rd Inventor
(a) Full Name (3 names or 2 names & 1 initial)	Gerald P Michalak		
(b) Home Address	921 Woodway Bluff Circle Cary NC 27513	919-412-1840 LH	
(c) Work Phone	~~919 472 7538~~	gmichala@qualcomm.com	
(d) Citizenship	USA		
(e) Pay No. (5 digit)	24669	geraldm57@earthlink.net	
(f) Manager	Kevin McCann		
(g) Cost Center	11240		

3. **Date the invention was conceived (use form - mm/dd/yy):** 4/19/03

4. **Identify dates (if applicable):**
   - **Past disclosure of the invention outside the company:** none
   - **Future disclosure of the invention outside the company:** none
   - **Publication of the invention:** none
   - **Discussion with business partners about the invention:** 4/22/03

5. **Past or present use of the invention (identify products and dates):** none

6. **Future use of the invention (identify products and dates):** tbd

7. **Identify related invention disclosures known to you:** none

8. **Identify related products, patents, or publications known to you:** **many Bluetooth products and patents are generally related via Bluetooth.**

9. **Please complete the second page of this form for your invention, along with any other relevant documentation.**

RECEIVED ON
APR 24 2003
SONY ERICSSON

The invention described in the attached invention disclosure is hereby submitted under my employment agreement with SEMC

Inventor's full signature	Date	Witnessed, read, understood, and signed by	Date
(1)	4-23-03	(1)	4/24/03
(2)		(2)	
(3)		(3)	

Submit to: Mailbox "SEMC Innovations" & send a signed copy to Docket Coordinator (Nancy Ferguson) 8001-4ALegal

Sony Ericsson

Invention Disclosure Docket No. _____

Title:

1. What area of technology is your invention in? (Check all that apply)

- ☐ **Accessories**
- ☐ **Algorithms**
- ☒ **Acoustic / audio**
- ☐ **Antennas**
- ☒ **Baseband / digital**
- ☐ **Other:**
- ☒ **Batteries / chargers**
- ☐ **Displays / LCDs**
- ☐ **DSP**
- ☐ **Interconnect/packages/PCB**
- ☐ **Manufacturing**
- ☒ **Phone architectures / RF**
- ☒ **Mechanics**
- ☐ **Phone features/concepts/architecture**
- ☐ **Software**
- ☐ **Systems**

2. What are the benefits of your invention?

- ☐ **Appearance**
- ☒ **Better performance**
- ☒ **Cost savings**
- ☒ **Efficiency**
- ☐ **Other:**
- ☒ **Easier to use**
- ☐ **Improved audio**
- ☒ **New feature**
- ☐ **Power saving**

3. What problem is solved by your invention and how was it solved before (inside or outside SEMC)? Cite any known inventions for which yours is a replacement.

The vast majority of cell phone calls are conducted by the user physically holding the phone to their ear. This is uncomfortable for long periods on time and requires the dedicated use of the user's arm. Examples are people driving one handed, or people grocery shopping one handed while carrying on a conversation.

To solve this problem headsets are used. However, wired headsets have the dis-advantage of a wire that gets tangled with itself and caught upon objects as the user moves about.

Another step forward is a wireless headset, such as a Bluetooth headset. However Bluetooth headsets have the disadvantages of:

- needing to monitor the battery and separately charge via a car or home charger
- needing to be tracked and carried separately from the phone
- Needing to be activated when desired, i.e. button presses to transfer audio from the phone to the headset.

The invention described in the attached invention disclosure is hereby submitted under my employment agreement with SEMC

Inventor's full signature	Date	Witnessed, read, understood, and signed by	Date
(1)		(1)	
(2)		(2)	
(3)		(3)	

Submit to: Mailbox "SEMC Innovations" & send a signed copy to Docket Coordinator (Nancy Ferguson) 8001-4ALegal

Sony Ericsson

4. What is your invention and how is it better than prior solutions? Describe in detail the structure and operation, and how to make and use your invention, particularly the features which make it advantageous. Include drawings, flow charts, block diagrams, schematics, etc.

My invention is the integration of a wireless headset into the mobile phone. The wireless headset will click into the phone and serve as the normal speaker and mic of the phone. By pressing a physical release button, the headset will un-clip and can be used by placing the headset over the ear. To revert back to normal phone operation, the headset is snapped back onto the phone. The switching of modes from 1) integrated speaker and mic to 2) wireless headset is automatic and is triggered by the mobile phone sensing whether the integrated wireless headset is clicked (docked) onto the mobile phone.

Advantages of this scheme are:

- Wireless headset is integral with the phone, not carried separately
- Wireless headset charges from the mobile phone, the user is not concerned with charging the batteries of two separate pieces of equipment.
- Wireless headset mode is triggered automatically, no need to press buttons.
- Multiple functions are shared between the wireless headset and mobile phone: speaker, mic, codec, charging circuitry. This results in smaller size and lower cost.

An enabler for this invention is the small size and low cost of the wireless headset. For example single chip Bluetooth solutions are commercially available in the $3 range and occupy less than 100 square millimeters.

One method to physically integrate the wireless headset is to allow the wireless headset to click into a matching recess in the mobile phone. This will allow a smooth overall package and allow the phone to be used in the traditional mode of holding the phone to one's head. This is shown in figure 1.

A block diagram of a conventional mobile phone and wireless headset is shown in figure 2 for reference. Block diagrams showing the components of the invention are given in figure 3, for both the wireless headset attached and for the headset detached.

Sony Ericsson

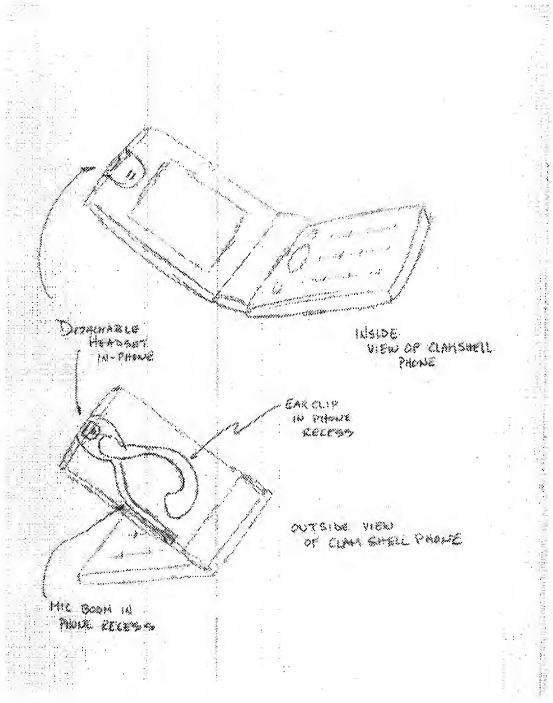


Figure 1.

The invention described in the attached invention disclosure is hereby submitted under my employment agreement with SEMC

Inventor's full signature	Date	Witnessed, read, understood, and signed by	Date
(1)		(1)	
(2)		(2)	
(3)		(3)	

Submit to: Mailbox "SEMC Innovations" & send a signed copy to Docket Coordinator (Nancy Ferguson) 8001-4ALegal

Sony Ericsson

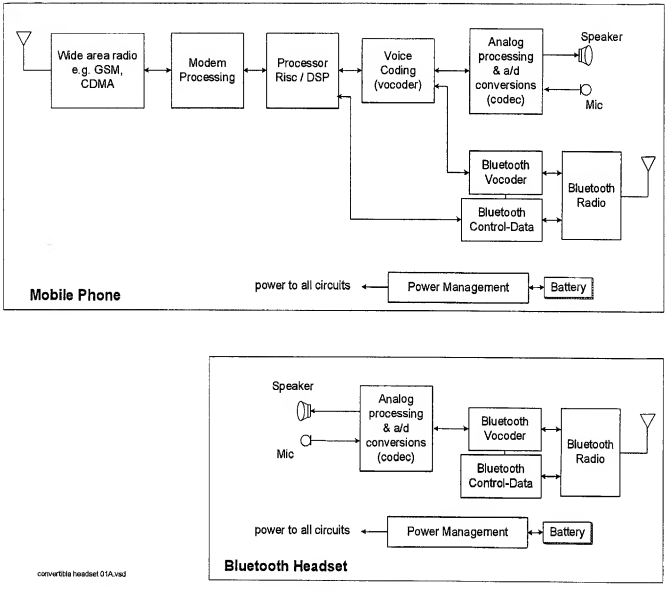


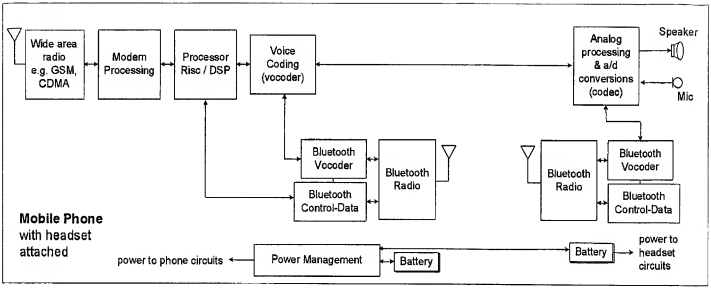
Figure 2, Conventional Phone and Wireless Headset.

The invention described in the attached invention disclosure is hereby submitted under my employment agreement with SEMC

Inventor's full signature	Date	Witnessed, read, understood, and signed by	Date
(1)		(1)	
(2)		(2)	
(3)		(3)	

Submit to: Mailbox "SEMC Innovations" & send a signed copy to Docket Coordinator (Nancy Ferguson) 8001-4ALegal

Sony Ericsson



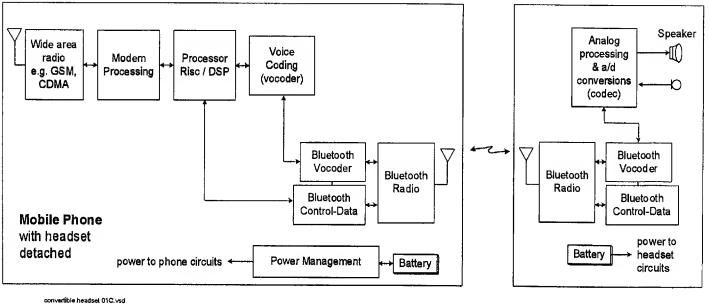


Figure 3, Integrated Mobile Phone and Wireless Headset.

The invention described in the attached invention disclosure is hereby submitted under my employment agreement with SEMC

Inventor's full signature Date	Witnessed, read, understood, and signed by Date
(1)	(1)
(2)	(2)
(3)	(3)

Submit to: Mailbox "SEMC Innovations" & send a signed copy to Docket Coordinator (Nancy Ferguson) 8001-4ALegal